



## Description of Pain Levels in Postoperative Sectio Caesarea Patients Using, The ERACS Method

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### CROSS-SECTIONAL STUDY

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#### Abstract

**Background:** Postoperative pain management is an essential component of patient care after cesarean section (C-section) because inadequate pain management can negatively affect maternal recovery as well as the psychological well-being of mothers and overall surgical outcomes. Enhanced Recovery After Cesarean Section (ERACS) has been introduced to enhance the care patients receive in the perioperative period concerning reduced pain, improvement in recovery, and decreased opioid dependence. Despite growing adoption, very few studies have reported on the ability of the method to manage post-C-section pain. **Purpose:** To evaluate the pain experience of postoperative C-section patients managed with the ERACS method in Bunda Medika Jakabaring Hospital. **Methods:** A cross-sectional descriptive quantitative study was conducted among 66 Cesarean delivery patients treated by the ERACS method from July 20 to August 20, 2024. The purposive sampling method was used to select the subjects, and the pain levels were measured by using the Numerical Rating Scale (NRS). Pain levels were categorized as no pain (0), mild pain (1-3), moderate pain (4-6), or severe pain (7-8). **Results:** Of the patients, 16 (24.2%) had no pain; 43 (65.2%), had mild pain; 5 (7.6%), were moderate; and 2 (3.0%) had severe pain. Most of the patients (65.2%) noted only mild pain, indicating that ERACS contributes significantly to reducing postoperative pain. **Conclusion:** These findings indicate that the ERACS method greatly contributes toward minimizing postoperative pain in C-section patients, thus endorsing its use in the clinical setting. Further studies should also consider larger sample sizes and comparative analyses to substantiate these findings and look into other advantages of ERACS in enhancing.

**Keywords:** eracs; postoperative pain; cesarean section; paint management; enhanced recovery

### Introduction

The development of anesthesia science is currently very broad "Anesthesia agent" which used to be only ether now has dozens of variations, both inhalation, intravenous and other drugs. Facilities for performing surgical procedures and other procedures are also developing. Neuraxial blocks (spinal and epidural anesthesia) and peripheral nerve blocks have been practiced daily with various advantages [1].

The type of anesthesia in patients undergoing surgery can be done with general anesthesia (general anesthesia), and anesthesia in a certain part of the body (regional anesthesia). Surgical procedures using either regional or general anesthesia both have their own complications. Regional anesthesia is associated with a lower likelihood of inpatient mortality and pulmonary complications compared to general anesthesia [2].

Spinal anesthesia is an option for lower abdominal and lower extremity surgery, this anesthesia technique is popular because it is simple, effective, and safe for the nervous system, the concentration of drugs in plasma is not dangerous and has a strong analgesic but the patient is still conscious [3]. One of the surgical procedures that use spinal anesthesia is *sectio caesarea*. *Sectio caesarea* is an artificial delivery in which the fetus is born through an incision in the front wall of the abdomen and the wall of the uterus provided that the uterus is intact and the fetal weight is above 500 grams [4]. Postpartum women often experience a range of issues, such as discomfort, anxiety, and difficulties with movement, after a cesarean section. The surgical incision wound under the belly is the source of pain experienced by postpartum cesarean moms. Mothers' psychological and physiological makeup, as well as their pain tolerance, determine the intensity of the agony they experience after a cesarean section [5].

The subjective experience of discomfort or pain is often linked to real or prospective harm to tissues. A painful sensation is one that elicits a variety of physiological, psychological, and behavioral responses in response to external or internal stimuli, whether those sensations originate in the body or travel via the nervous system to the brain [6]. When pain goes untreated, it may have a profound effect on a person's mental health, causing issues with worry, fear, behavior, sleep, and even changes in personality. Biological considerations [7]. A recent trend in cesarean sections is the ERACS (Enhanced Recovery After Cesarean section) technique, which takes a unique approach to pre-, during-, and post-operative care for mothers to provide the best possible outcome for their health. The aim is to speed up the healing process or recuperation after labor in order to increase

mobility. Additional benefits, such as better treatment quality and less opioid exposure and addiction, may result from implementing the cesarean section program. Preoperative planning, intraoperative care, and postoperative care are the three pillars upon which ERACS rests. Education on prenatal care, when to fast, when to provide antibiotics, and how to optimize hemoglobin are all part of preoperative preparation. Late cord clamping, early breastfeeding initiation (IMD), temperature control, hydration and blood pressure management, anesthesia, analgesics, and uterotonics delivery are all part of intraoperative care. Postoperative care includes early oral intake, analgesic administration, early mobilization, and early urinary catheter removal [8].

Syamsiah's research (2023) showed that the most dominant factors influencing the choice of delivery method were reduced surgical pain (12.06%), higher maternal satisfaction with caring for and breastfeeding her baby (11.83%), and faster recovery (11.71%). So it can be concluded that in the method of *sectio caesarea* with ERACS reduced surgical pain is the most influential factor for mothers in choosing their delivery method (9).

Research conducted by Tiara (2022) entitled *The ERACS method as a perioperative program for sectio caesarea Surgery patients* in this study used a case study by taking a sample of patients who were treated and then concluded and obtained the results that the ERACS method has many benefits and advantages including reducing the period of hospitalization, reducing postoperative pain and accelerating postoperative recovery (10). Nisak's research (2023) found that mothers giving birth with the ERACS method had less pain when compared to mothers who gave birth with non-ERACS methods (3).

In their study, Karyawanto (2023) found that post-caesarean section hemorrhage affected 52.5% of the participants, whereas 47.5% had hemorrhage in the remaining 19 participants. Alternatively, when comparing the post-caesarean section rate using conventional methods, 10 people (25% of the total) experienced a mild rate, 27 people (62.5%) a moderate rate, and 3 people (7.5%) a severe rate. There is a difference in blood pressure after cesarean section using the ERACS and conventional blood pressure measurement methods, according to the Mann-Whitney U test results (p-value 0.006, or  $p < 0.05$ ) [13].

The number of cesarean sections performed at Bunda Medika Jakabaring Hospital in October 2023 was 176 patients, with 101 undergoing the procedure using traditional procedures and 75 using the ERACS approach, according to a preliminary analysis. Four patients reported moderate pain and one reported light pain, according to a preliminary study using the ERACS technique and the numerical Pain Rating Scale, which measured pain severity. The study included five patients who had cesarean sections after surgery.

In light of the findings, the authors intend to investigate how patients at Bunda Medika Jakabaring Hospital who had a cesarean section and used the improved recovery after cesarean section (ERACS) technique reported their pain levels.

## Methods

Quantitative descriptive research is used in this research strategy. The 66 patients who had ER-assisted cesarean sections at Bunda Medika Jakarta Hospital's operating room between July 20 and August 20, 2024, made up the study's sample. The participants were selected using a purposive selection strategy. Looking at medical records served as the research instrument for the age and

education factors in this study. An observation sheet from the numerical Rating Scale (NRS) for pain served as the research instrument for this study's variability level. Approval number B.L.PPM-UHB/882/08/2024 it indicates that this study has been greenlit by the University of Harrogate's Research Ethics Committee.

## Findings

Table 1. Frequency distribution of age of section caesarea patients in the operating room of Bunda Medika Jakabaring Hospital

Age	Frequency (f)	Percentage (%)
Age <20 Years	25	37,9
Age 20 – 35 Years	14	21,2
Age >35 Years	27	40,9
<b>Total</b>	<b>66</b>	<b>100,0</b>

Table 1 shows that of the 66 respondents studied, the highest age was <20 years, namely 25 respondents (37.9%).

Table 2. Distribution of education frequencies for caesarean section patients in the operating room of Bunda Medika Jakabaring Hospital

Education	Frequency (f)	Percentage (%)
SD	21	31,8
SMP	20	30,3
SMA	17	25,8
College	8	12,1
<b>Total</b>	<b>66</b>	<b>100,0</b>

Table 2 shows that of the 66 respondents studied, most had elementary school education, namely 21 respondents (31.8%).

Table 3 Bunda Medika Jakabaring Hospital operating room sectional cesarean section patients' pain levels distributed in frequency.

Pain level	Frequency (f)	Percentage (%)
No pain (0)	16	24,2
Mild pain (1-3)	43	65,2
Moderate pain (4-6)	5	7,6
Severe pain (7-8)	2	3,0
<b>Total</b>	<b>66</b>	<b>100,0</b>

Table 3 shows that of the 66 respondents studied, most felt mild pain levels (1-3), namely 43 respondents (65.2%).

## Discussions

### 1. Age

In Table 1, it can be seen that out of the 66 participants surveyed, 25 (or 37.9%) were under the age of 20, 14 (21.2%) were between the ages of 20 and 35, and 27 (40.9%) were beyond the age of 35. Any living being, or inanimate object, may have its age measured in years. As a woman's reproductive years progress, she goes through three distinct stages: the young reproductive age (below 20 years old), the healthy reproductive age (between 20 and 35 years old), and the elderly reproductive age (beyond 35 years old).

There were 132 respondents (or 69.1% of the total) who were pregnant and of childbearing age, which is consistent with the findings of Sukma and Sari (2020). While 22 percent of the respondents gave birth to children older than 35 years old, 17 percent of the respondents were under the age of 20, and 42 percent were pregnant.

The majority of caesarean section patients at Bunda Medika Jakabaring Hospital are elderly, according to the researcher's argument based on the study and theory presented above. Pregnant women are presumed to be unaware of the significance of maintaining a healthy reproductive age [10-14]

### 2. Education

According to Table 2, out of the 66 participants surveyed, 31.8% had completed elementary school, 30.3% had completed junior high, 25.8% had completed high school, and 12.1% had completed university education. In order for children to grow up safe and happy, education is defined as either helping them develop their own skills or directing all the inherent energies inside them toward a desired goal. People with more education are better equipped to adjust to new situations because they can draw on their knowledge and experience [15-18].

The researcher contends, using the study's findings and the hypothesis presented above, that most cesarean patients at Bunda Medika Jakabaring Hospital had only completed elementary school. This is due to the fact that many individuals are still unwilling to acknowledge the significance of education [19-21]

### 3. Pain Level

Based on the data in Table 3, out of the 66 participants surveyed, 24.2% reported no pain at all, 65.2% reported mild pain (ranging from 1 to 4), 75.5% reported moderate pain (ranging from 4 to 6), and 3.0% reported severe pain [4-5]. The subjective experience of discomfort or pain is often linked to real or prospective harm to tissues. Typically, when our bodies are stimulated or when our nerves are compressed and sent to the brain, we experience what is known as pain. This unpleasant situation is accompanied by several physiological, psychological, and behavioral responses.

The most important criteria affecting the choice of delivery technique, according to Syamsiah's study (2023), are shorter recovery times

(11.71%), increased satisfaction for the mother in caring for and breastfeeding her baby (11.83%), and less surgical wound discomfort (12.06%). It follows that the most important consideration for moms when selecting a delivery technique is the level of surgical pain they can tolerate, and the sectional cesarean with ERACS approach meets this need [21-23].

According to research by Tiara (2022) titled "The ERACS Method," the ERACS technique offers several advantages and benefits, such as shortening the duration of hospitalization, decreasing postoperative discomfort, and speeding up recovery time. The discomfort experienced by moms during childbirth was significantly reduced while using the ERACS approach [23].

According to Karyawanto's study (2023), of the patients who had cesarean sections using ERACS anesthesia, a total of 21 (52.5%) reported mild pain and 19 (47.5%) reported moderate pain. Prior studies using the ERACS technique for sectioning caesareans have shown moderate discomfort.

In light of the foregoing, the researcher contends that sectioning caesareans with the ERACS method at Bunda Medika Jakabaring Hospital results in relatively mild postoperative pain for patients.

### Limitations Research

In this study, there are limitations, where this study only used 66 respondents as samples in the study. In a study, the more the number of patients, the more accurate the results of the study will be, and can describe the actual conditions.

### Conclusion

The outcomes of this study could show that Enhanced Recovery After

Cesarean Section (ERACS) would be effective in reducing post-operative pain in maternity patients who underwent surgery at Bunda Medika Jakabaring Hospital. Most patients (65.2%) had mild pain, while a small minority experienced moderate to severe pain. Other factors like age and educational level could affect the patient's pain experience. These findings support the clinical use of ERACS methods in producing speedy recovery and decreased opioid dependency. The extent of these results must be verified with further studies involving larger samples and searching for additional advantages of ERACS for enhancing postoperative outcomes.

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### Conflict of Interest Statement

The authors have confirmed that they have no competing interests.

### Data Availability

The datasets used or generated in this study are available from the corresponding author upon reasonable request.

### Author Contributions

**Wahyudi Saputra:** Conception and design of the study, Search Data Base, Methodology, Analysis Risk of Bias, Data Analysis and Interpretation, Writing, Review, and Editing. **Danang Tri Yudono:** Study conception and design, search database, methodology, data



analysis, and interpretation, and writing, review, and editing. **Septian Mixrova Sebayang**: Conception and design of the study, Search Database, Methodology, Data Analysis, and Interpretation, Writing, Review, and Editing.

## References

1. Soenarto, R. (2020). World Anesthesia Day: 174 Years of Anesthesiology Development until Today. JAKARTA: FKUI Public Relations. Retrieved from <https://fk.ui.ac.id/berita/world-anesthesia-day-174-tahun-perkembangan-anestesiologi-hingga-hari-ini.html>
2. Neuman MD, Silber JH, Elkassabany NM, Ludwig JM, Fleisher LA. Comparative effectiveness of regional versus general anesthesia for hip fracture surgery in adults. *Anesthesiology*. 2012;117(1):72-92.
3. Butterworth, J. F., Mackey, D. C., & Wasnick, J. D. (2018). *Morgan & Mikhail's Clinical Anesthesiology* (Fifth Edit). New York: MCGraw-Hill Education.
4. Wiknjosastro, H. (2017). *Surgical Science of Obstetrics* (Second). Jakarta: Sarwono Prawirohardjo Library Foundation.
5. Simkin, P., Whalley, J., & Keppler, A. (2015). *The complete guide to pregnancy, labor and infancy*. Jakarta: Arcan, 378.
6. Padila. (2014). *Maternity Nursing Textbook*. Yogyakarta: Nuha Medika.
7. Wardani, N. P. (2014). *Acute Pain Management*. Denpasar: Faculty of Medicine, Udayana University.
8. Joshi, G. P., & Kehlet, H. (2019). Postoperative pain management in the era of ERAS: an overview. *Best Practice & Research Clinical Anaesthesiology*, 33(3), 259-267.
9. Syamsiah, M. (2023). Analysis of factors influencing the choice of sectio caesarean delivery method with ERACS at RSIA Dua Surabaya.
10. Tika TT, Sidharti L, Himayani R, Rahmayani F. ERACS method as a perioperative program for caesarean section patients. *J Med Hutama*. 2022;03(02):2386-91.
11. Nisak AZ, Kusumastuti DA, Munawati M. Differences in Conventional Methods and Eracs with Pain Levels in Post Sectio Cesarea Patients. *J Nursing and Midwifery Science*. 2023;14(1):261-8.
12. Karyawanto, N., Yuniarti, E. V., & Merbawani, R. (2023). Differences in Post Sectio Caesarea Pain with ERACS and Conventional Anesthesia Methods. Bina Sehat PPNI University Library.
10. Fitriainingsih, Rumantika, Burhan A. Efek Hypotermia Pasca General Anestesi: A Scoping Review. *Viva Med J Kesehat Kebidanan Dan Keperawatan*. 2021;11.
11. Baroki Saragih Mn, Lintang Suryani R, Burhan A. Overview Of Spinal Anesthesia Injection Techniques At Rsi Fatimah Cikacap: English. *Java Nurs J*. 2023 Oct 16;1(2):97–102.
12. Nurdiansyah P, Susanto A, Burhan A, Suandika M, Wijayanti I. Overview Of The Incidence Of Post Operative Nausea And Vomiting In Spinal Anesthesia For Sectio Caesarea Patients In The Recovery Room Of Fatimah Cilacap Islamic Hospital. *Java Nurs J*. 2024 Feb 1;2(1):50–6.
13. Susanti I, Mixrova Sebayang S, Burhan A. Impact Of Ondancetron In Intra-Anesthesia During Caesarean Section: A Meta-Analysis Of Randomized Trials. *Java Nurs J*.

- 2024 Feb 1;2(1):26–42.
14. Alverina F, Suryani Rl, Burhan A. An Overview Caring Behavior Of Anesthesiologist In Spinal Anesthesia Patients At Rsud Cilacap. *Java Nurs J.* 2024 Jun 21;2(2):124–30.
  15. Vika Andriyani, Roro Lintang Suryani, Asmat Burhan. The Relationship Of Family Support With The Level Of Pre-Anesthesian Sectio Patients In The Hospital Pekalongan Regional General. *Java Nurs J.* 2024 Feb 1;2(1):43–9.
  16. Triyadi F, Mixrova Sebayang S, Burhan A, Dwi Agus Yulianto, Refa Teja Muti. The Relationship Between Age And Duration Of Surgery With The Incidence Of Post Anesthesia Shivering In Section Caesarean Patients At Bendan Hospital Pekalongan City. *Java Nurs J.* 2024 Feb 1;2(1):7–14.
  17. Angin Sep, Novitasari D, Burhan A. Volume 6 Number 1, Februari 2024 E-Issn 2715-1972; P-Issn 2714-9749 [Http://Jurnal.Globalhealthsciencegroup.Com/Index.Php/Ijghr](http://Jurnal.Globalhealthsciencegroup.Com/Index.Php/Ijghr). 2024;6(1).
  18. Permata Pp, Burhan A, Handayani Rn. Pengaruh Pemberian Aromaterapi Peppermint Terhadap Post Operative Nausea And Vomiting (Ponv) Post Operasi Spinal Anestesi Di Rsud 45 Kuningan. *J Inov Glob.* 2024 Oct 27;2(10):1517–34.
  19. Fauzan Dh, Sebayang Sm, Burhan A, Suhendro. Gambaran Kejadian Shivering Post Spinal Anestesi Pada Pasien Benign Prostatic Hyperplasia Di Rumah Sakit Umum Daerah Cilacap. 2024 May 10 [Cited 2024 Aug 22]; Available From: <https://zenodo.org/doi/10.5281/zenodo.11173343>
  20. Habsah Jumma Mh, Burhan A, Heri Susanti I. The Effectiveness Of Hyperbaric Bupivacaine Administration On Hemodynamic Changes In Sectio Caesarea Patients. *Java Nurs J.* 2024 Oct 1;2(3):247–56.
  21. Ayu Kartika Sari V, Suandika M, Burhan A, Tri Yudono D. Overview Of Induction Drug Dosage Types With The Eracs (Enhanced Recovery After Caesarean Surgery) Sectio Caesarean Method In Post Sectio Caesarean Patients At Hermina General. *Java Nurs J.* 2024 Jun 21;2(2):110–5.
  22. Yanrin Asnp, Burhan A, Sukmaningtyas W, Adriani P. Gambaran Kejadian Hipotermi Pada Pasien Sectio Caesarea Di Rumah Sakit Umum Daerah Brebes. 2024 May 26 [Cited 2024 Aug 22]; Available From: <https://zenodo.org/doi/10.5281/zenodo.11313844>
  23. Afrilya To, Sukmaningtyas W, Burhan A. Overview Of Post-Operative Nausea And Vomiting (Ponv) In Patients Undergoing Caesarean Section With Spinal Anesthesia At Fatimah Islamic Hospital Cilacap. 2023;16.